

## **REMARKS**

### **35 USC 102(b) Rejection**

Claims 19, 22-44, 46, 48, and 51 were rejected under 35USC102(b) by Swan III et al. U.S. Patent Application No. 2001/0042700 A1 (“Swan”). The Office Action quotes excerpts from pages 3 and 4 of Swan and argues that Swan uses a combination of medium-pore zeolites such that one sieve inherently has a pore size index of one channel smaller than a channel of the other sieve. The rejection then reasons that higher propylene conversion (over a single sieve) is inherent.

The Response to Arguments Office Action paragraph 23 further finds Applicants’ arguments unpersuasive because, (Swan paragraph 0023) “Swan’s disclosure includes a mixture of shape-selective zeolites.”

Applicants respectfully traverse because:

Swan’s disclosure does not include a mixture of shape-selective zeolites; i.e., the clear English language meaning of the quoted Swan paragraph 0023 does not include a mixture of shape-selective zeolites.

The critical sentence misinterpreted in the Office Action from Swan paragraph 0023 is:

“...individual catalyst particles may contain large-pore *zeolite*, shape-selective *zeolite*, and mixtures thereof.” (emphasis added).

Note that Swan did not pluralize the word zeolite in either case. Thus the clear meaning of the sentence is that a catalyst particle may contain a large-pore zeolite, or a shape-selective zeolite, or a mixture of one of each of these. There is no indication to use more than one large-pore zeolite in the mixture and no logical interpretation to use more than one shape-selective zeolite in a mixture. If that had been Swan’s intent, he would have made the term “zeolite” a plural in one or both instances in the critical sentence.

Swan does not include a large-pore zeolite and a mixture of two medium-pore zeolites, as claimed.

To generalize, in the sentence “The particle may contain A, B, or mixtures of these.” The clear meaning of this sentence does not include mixtures of B. The mixture may have 75% A and 25% B; the mixture may have 40% A and 60% B; but clearly, two Bs are not indicated.

This interpretation is consistent with the use of the singular in reference to medium-pore zeolites elsewhere in the specification. Many references include lists of zeolites but those lists do not, without more, disclose or teach a mixture of two medium-pore zeolites.

Moreover, as given in numerous legal precedents, the reference document must be interpreted in light of its entire disclosure (“four corners”). Clearly, Swan disclosed and taught not only the requirement of a large-pore zeolite but also the option of a single shape-selective zeolite. Mixtures are not disclosed and cannot be fairly interpreted from the plain English meaning of Swan paragraph 0023.

The balance of the entire Swan document does not disclose or teach a mixture of medium-pore zeolites in the process. Swan paragraph 0028 specifies only ZSM-5; paragraph 0055 indicates a single medium-pore zeolite; and all of the examples indicate a large-pore zeolite with only a single medium-pore zeolite, or none at all. Mixtures of the latter are nowhere suggested or disclosed in the document.

Swan was directed to a high boiling feed (see Swan paragraph 0013) with a recycle process that includes hydrogenation of aromatics. There is nothing to urge the skilled artisan to go to the expense, trouble, and additional preparation time (all amounting to additional cost) of using two intermediate pore size molecular sieves. Use of one was merely optional to Swan.

Respectfully, why would the skilled artisan add another medium pore zeolite?  
What teaching suggests this and what motivates this?

Swan was directed to improve propylene yields from the process recycle and especially from fully hydroprocessing the cycle oil so as to make decahydronaphthalenes the prevalent hydrogenated aromatic and provide more propylene therefrom. Swan was focused on making the heavily hydrogenated species available, not on the combination of catalysts.

The particulars of paragraphs 4-12 of the Office Action similarly fail because none of the recited portions disclose a combination of the recited two medium, or a medium and a smaller pore, zeolite as claimed. Most especially, Office Action paragraphs 4 and 5 seem inappropriate since a 35USC102 rejection must provide more than a wording that is "similar to the Applicant's claim...."

### **35 USC 103(a) Rejection**

The rejection of Claims 20, 21, 45, 47, 49, and 50 over Swan under 35USC103(a) is refuted because the combination of two or more medium-pore zeolites for the claimed process is not only undisclosed by Swan, it is not even suggested.

Accordingly, Applicants reassert their unrefuted supportive arguments including:

(1) Swan paragraph 0055 discloses that increases can be obtained when "...a shape-selective zeolite is combined..." (emphasis added).

(2) Both Swan paragraphs 0023 and 0028 teach only two catalysts. Both paragraphs require a large pore zeolite. Neither paragraph teaches or suggests combinations of medium-pore zeolites. Paragraph 0023 describes the particles and generalizes with a "shape-selective zeolite"; and paragraph 0028 specifies that the shape selective zeolite is ZSM-5. Paragraph 0023 gives the genus and paragraph 0028 gives the species.

Finally, Office Action paragraphs 17-21 are inadequate to meet the elements of the base claim because a mixture of shape-selective zeolites is not taught. *In re Wertheim* is inapplicable because the invention does not lie within or overlap a disclosed range. Rather, the invention is not taught or suggested at all. While Swan represents a significant invention now widely used commercially and effective for recovering increased C3 by manipulation of undesirable aromatics, use of more than one medium-pore zeolite (if used at all) is unknown to Applicants in this widely practiced recycle process (Swan).

Unless one can properly answer the economically-driven questions raised in the response above, it is incorrect and inappropriate to suggest that Swan discloses a mixture of medium-pore zeolites for the claimed process. Reconsideration and allowance of the application are respectfully requested.

Respectfully submitted,

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